

Amendments to Claims

This listing of claims will replace all prior versions, and listings of claims in the application.

1-14. (Canceled)

15. (Currently amended) A method for analyzing a surface of a sample comprising:
producing an electron beam with a field emission source ~~for to exciting excite~~ a surface of the sample so that electrons are emitted therefrom;
filtering the electron beam using a monochromator energy filter;
receiving on an inlet of an energy analyzer the electrons emitted from the excited surface of the sample, with the emitted electrons producing a spectrum representative of a distribution of kinetic energies of the emitted electrons over the inlet; and
detecting the emitted electrons traveling through the energy analyzer for reproducing the distribution of the kinetic energies of the emitted electrons;
identifying a characteristic kinetic energy associated with a peak of the reproduced distribution of the kinetic energies of the emitted electrons; and
determining a chemical bond energy of the surface of the sample based at least in part on the identified characteristic kinetic energy.

16. (Previously presented) A method according to claim 15, wherein the detector reproduces the distribution of the kinetic energies of the emitted electrons along at least a direction orthogonal to a radial direction of said energy analyzer.

17. (Previously presented) A method according to claim 15, wherein the energy analyzer comprises a spherical capacitor energy analyzer.

18. (Previously presented) A method according to claim 15, wherein the monochromator energy filter reduces energy dispersion of the electrons of the electron beam to less than 0.2 eV.

19. (Previously presented) A method according to claim 15, wherein the monochromator energy filter reduces energy dispersion of the electrons of the electron beam to less than 0.1 eV.

20. (Previously presented) A method according to claim 15, wherein the surface of the sample being excited by the electronic beam has linear dimensions less than or equal to 100 nanometers.

21. (Previously presented) A method according to claim 15, wherein the field emission source comprises a Schottky emission source.

22. (New) A method according to claim 15, wherein said determining further comprises:

determining the chemical bond energy according to $BE = hv - KE - \Omega$, where BE is the chemical bond energy, hv is an energy of the electron beam, KE is the characteristic kinetic energy, and Ω is an extraction energy.

23. (New) A method according to claim 15, further comprising:

providing a visualization of the surface based at least in part on the emitted electrons traveling through the energy analyzer.